



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/044,279	01/10/2002	William K. Leonard	55476US005	9332
32692	7590	03/19/2004	EXAMINER	
3M INNOVATIVE PROPERTIES COMPANY PO BOX 33427 ST. PAUL, MN 55133-3427				FLETCHER III, WILLIAM P
ART UNIT		PAPER NUMBER		
		1762		

DATE MAILED: 03/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/044,279	LEONARD, WILLIAM K.
	Examiner	Art Unit
	William P. Fletcher III	1762

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 10 January 2002.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-58 is/are pending in the application.
- 4a) Of the above claim(s) 29-58 is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-18 and 20-28 is/are rejected.
- 7) Claim(s) 19 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All
 - b) Some *
 - c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ . |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>5 separate IDS's</u> . | 6) <input type="checkbox"/> Other: _____ . |

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-28, drawn to a method for improving the uniformity of a wet coating on a substrate, classified in class 427, subclass 359.
 - II. Claims 29-58, drawn to a device, classified in class 118, subclass 110.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case, the apparatus as claimed can be used to practice another and materially different process: one in which the periods of the wire-wound rods are selected to give an uneven coating of non-uniform thickness.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
4. During a telephone conversation with David R. Cleveland (Reg. No. 29,524) on 2/20/2004, a provisional election was made *without* traverse to prosecute the invention of Group I, claims 1-28. Affirmation of this election must be made by applicant in replying to this Office action. Claims 29-58 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Specification

5. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: METHOD FOR IMPROVING THE UNIFORMITY OF A WET COATING ON A SUBSTRATE USING AT LEAST TWO WIRE-WOUND RODS.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. **Claims 1, 4, 7, 8, and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Leonard et al. (US 3,844,813 A).**

With respect to claim 1, this reference teaches a process in which a wet coating on a substrate is contacted with at least two, rotating wire-wound (Mayer) rods, thereby evening the composition across the surface of the substrate (7:65-8:14; 12:19-23; and Fig. 3, 305).

Although this reference does not explicitly state that wetted surface portions of the rods contact and re-contact the coating, it is the examiner's position that this is an inherent feature of the process. When a coating roller in general, and a Mayer rod in particular, is in direct contact with a liquid coating material, some of the material sticks to the roller or rod. For a rotating rod and a moving substrate, as taught in this reference, the material is carried around the periphery of the rod and re-contacted with the coating at a different position on the substrate. Further, since this reference teaches a coating arrangement identical to that disclosed by applicant (see

applicant's Fig. 2) and otherwise teaches all of applicants other claimed process steps, this feature is either inherent or results from a feature not present in the claims.

With respect to claims 4, 7, and 8, this reference teaches that "any desired number" of Mayer rods may be used (8:10, 11). This teaching is inclusive of the up to at least ten wire-wound rods recited in these claims.

With respect to claim 16, as shown in Fig. 3, sheet substrate **s** is shown being supported by guide rollers **306** and **307**.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. **Claims 2-6, 9-11, 17, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leonard et al. (US 3,844,813 A).**

The teaching of Leonard is detailed above. With respect to the Mayer rods, Leonard explicitly teaches: “The Mayer rods **305** are controllable as to size and speed to even the coating and, if necessary, to accurately meter off any access” (12:19-23). Further, it is well-known that both the speed and size of a roller or rotating rod determine the period of contact thereof. Consequently, since Leonard clearly teaches that size, speed, and, by extension, period of contact, are known result-effective variables — and absent evidence of unexpected results demonstrating the criticality of the claimed size, speed, and period — it would have been obvious to one of ordinary skill in the art to modify the process of Leonard so as to optimize these result-effective variables by routine experimentation (see MPEP § 2144.05(II)(B)).

With specific respect to claims 10 and 11, as noted above, Leonard teaches that “any desired number” of Mayer rods may be used (8:10, 11). This teaching is inclusive of the up to at least ten wire-wound rods recited in these claims.

11. Claims 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leonard et al. (US 3,844,813 A), as applied to claim 1 above, in further view of Lewicki, Jr. (US 3,718,117 A) and Holt (US 2,066,780 A).

The teaching of Leonard is detailed above. Further, this reference teaches that, *in general*, the Mayer rods are contra-rotated, but does not require that they be so (8:8-12). Lewicki teaches a method in which a rod, having a cut, screw-thread configuration, is utilized to provide a uniform liquid coating on the surface of a substrate (1:34-38; 1:44-57; and 2:1-67). The rod rotates “due to the movement of the sheet” (i.e., co-rotates) (2:42-45). Holt teaches the equivalence of a cut, screw-thread configuration and a wire-wound rod in providing a uniform liquid coating on the surface of a substrate (2:42-44 and 4:45-51). Consequently, it would have

been obvious to one of ordinary skill in the art to modify the process of Leonard so as to utilize co-rotating Mayer bars, driven by the movement of the substrate. One of ordinary skill would have been motivated to do so by the desire and expectation of successfully providing a uniform liquid coating on the surface of the substrate. Again, it is the examiner's position that a rotating Mayer rod in direct contact with a liquid coating material, regardless of whether the rod is contra- or co-rotating, inherently carries coating material around the periphery of the rod and re-contacts this material with the coating at a different position on the substrate.

12. Claims 20-24, 26, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leonard et al. (US 3,844,813 A), as applied to claim 1, in further view of Reade et al. (US 4,102,301 A).

The teaching of Leonard is detailed above. While this reference teaches several examples of applicator units suitable for the process, the clear teaching of the reference is that any applicator unit may be utilized (5:55-57; 8:50-52; and 10:23-61). Reade teaches a process in which a moving substrate is coated with a liquid coating material in the form of stripes, with the coating later treated to improve the uniformity thereof (Fig. 1 and 2:43-21). It would have been obvious to one of ordinary skill in the art to modify the process of Leonard so as to apply the liquid coating material in the form of stripes, as taught by Reade. One of ordinary skill in the art would have been motivated to do so by the desire and expectation of successfully depositing the coating material on the substrate.

With specific respect to claim 23, it is the examiner's position that spraying is a well-known and readily-apparent means of applying a coating material to a substrate.

With specific respect to claim 24, insofar as elimination of the void initially present between the stripes reads on “conversion to a “continuous, void-free coating,” Leonard in view of Reade reads on this claim.

With specific respect to claim 25, Reade teaches a final coating thickness of between 2.5 and 3.8 micrometers (4:8-10).

13. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Leonard et al. (US 3,844,813 A) in view of Reade et al. (US 4,102,301 A), as applied to claim 26 above, in further view of Thornton et al. (US 4,344,989 A).

The combined teaching of Leonard and Reade is detailed above. Both of these references teach that any composition may be applied to the substrate (L9:15-10:22 and R4:21-40). Further, the process of Leonard is particularly suited for the application of loading compositions to textile substrates (9:15-10:22). Neither of these references teach that the coating composition comprises two or more adjacent lanes containing two or more differing coating formulations. Thornton teaches a process in which a textile substrate is treated by the application of two or more lanes of differing coating composition in order to yield a fabric having zones with different properties (Fig.5 and 2:35-7:28). Consequently, it would have been obvious to one of ordinary skill in the art to modify the process of Leonard in view of Reade so as to apply different loading composition in the fashion taught by Thornton. One of ordinary skill in the art would have been motivated to do so by the desire and expectation of yielding a textile having zones with different properties.

Allowable Subject Matter

Art Unit: 1762

14. Claim 19 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

15. The following is a statement of reasons for the indication of allowable subject matter: the prior art neither teaches nor reasonably suggests the method of claim 18 in which the speed is varied sinusoidally.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William P. Fletcher III whose telephone number is (571) 272-1419. The examiner can normally be reached on Monday through Friday, 9 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive P. Beck can be reached on (571) 272-1415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

WPF 3/12/2004

William P. Fletcher III
Examiner
Art Unit 1762

B.C.

BRET CHEN
PRIMARY EXAMINER